



Special Report SR-4567 Issue 1, March 1998

# BellSouth Telecommunications, Inc. Electronic Interfaces Project: Software Process Evaluation Report

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#### 1. Introduction

This Special Report (SR) provides the findings of the Bellcore evaluation conducted on BellSouth's Electronic Interfaces Project on January 20, 1998. This Special Report will be used by BellSouth in conjunction with State and Federal 271 Filings and Hearings.

This evaluation was based on BellSouth's Information Technology (IT) Organization's Software Solution Process Framework (SSPF) and the Electronic Interfaces Project local procedures. The evolution and nature of the BellSouth software processes, and those that were part of Bellcore's evaluation, are outlined in Second 2 of this report. Also documented in this section is the evaluation or assessment process. The documented evaluation results are discussed in Section 3.

#### 2. Software Process Descriptions

#### 2.1 SSPF Description

#### 2.1.1 Purpose and Scope

The purpose of instituting software processes within BellSouth was to measurably improve productivity, quality of delivered products, and predictability of project cost and schedule. Figure 2-1 depicts the three software process framework implemented by BellSouth.

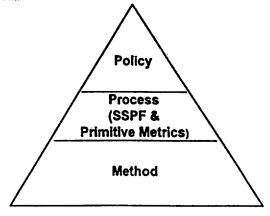


Figure 2-1: BellSouth Software Process Pyramid

The top layer, the Policy layer, is enforced by IT management and describes in a few sentences the operating principles of the organization.

As directed by IT policy, and represented in the middle layer of Figure 2-1, the Software Solutions Process Framework (SSPF) and Primitive Metrics (as defined in the IT Software Metrics Handbook v2.0) define organization-level processes that are essential for the successful management and control of software projects.

The SSPF is an evolving framework that is represented by a very "thin layer" of processes. In this version, the SSPF is not intended to be prescriptive; instead, it describes the "what" of software projects and not the "how." As best practices are identified and adopted, they will be added to the SSPF to define more of the "how."

The SEI's Capability Maturity Model (CMM) is the foundation for the SSPF. The CMM is a five-level model from the Software Engineering Institute that BellSouth has adopted for its process improvement efforts. The SSPF is a first step toward achieving CMM Level 2. The SSPF is planned to evolve in the future to support all Level 2 practices and, ultimately, the goals of Level 3 through Level 5.

The bottom layer of Figure 2-1 depicts the Method layer. The Method layer contains both IT publications, like the IT Project Management Handbook, and local project procedures, such as the STNMS Inspection Process.

Supplemental metrics, as described in the IT Software Metrics Handbook v2.0, are also contained within the Method layer. The SSPF was constructed to take advantage of these existing methods. Where the SSPF contradicts any method, either at the IT or local level, the SSPF supersedes that method.

The quality characteristics that the SSPF must possess are:

- Accountability responsibility is formally assigned and knowledgeably accepted.
- Acceptability those subject to the process understand both process and its rationale.
- Auditability compliance can and will be determined objectively.
- Appropriate flexibility consistency of approach is sought where possible, local solutions are supported where appropriate.
- Continuous improvement organizational learning becomes the norm.

#### 2.1.2 Compliance Guidelines

All projects must comply with the SSPF. As a minimum, software releases must be planned and managed as projects. Phase-level SSPF compliance must be applied either at the release level or the work request level, as appropriate to meet the project's needs. To comply, the project must be able to demonstrate to an SSPF auditor that the project has performed the activities and steps as defined in the SSPF.

An audit schedule will be followed with emphasis on those projects that have not yet demonstrated compliance. Audit results are reported using the SSPF Audit Procedures. Once a project demonstrates compliance, audits will become less frequent.

Demonstration of compliance is provided by the project team to the auditors through a review of work products defined as:

- Entry criteria and exit criteria for activities,
- Process records of the activity, such as meeting minutes and review sheets,
- Information from interviews.

For the purpose of the SSPF, all software work is considered to be part of a project and must comply with the SSPF. However, the SSPF does not require that all processes/procedures be created from scratch for each project, needlessly repeating standard procedures. If a project team uses documented procedures that have been used in similar projects, they can tailor those procedures for their specific project in lieu of creating unnecessary documentation. Similarly, an organization may have standard procedures that are to be followed on each project. A good example of this is configuration management. By referencing a complete set of local procedures, the amount of unique documentation that must be created for each project is greatly reduced.

For projects that have set CMM Level 2 as a goal and for other projects interested in exceeding SSPF compliance, the SSPF provides the ability to identify procedures to be followed and to add practices to those required and suggested by the SSPF, as long as the procedures/practices do not contradict the SSPF.

#### 2.2 SEI Capability Maturity Model for Software

As mentioned above, the SEI's Capability Maturity Model (CMM) is the methodological foundation for the SSPF. In 1986, the Software Engineering Institute (SEI) began developing a process maturity framework to help organizations improve their software development processes. The process maturity framework description was released in 1987. Over the next four years, this framework evolved into the Capability Maturity Model for Software (CMM). The CMM for Software has standardized the notion of measuring the software process maturity of organizations. The model is intended to help software organizations improve their processes through five different levels of maturity.

#### 2.2.1 Process Maturity Levels

Software process maturity defines the extent to which a specific process is defined, managed, measured controlled, and effective. A maturity level is a well-defined evolutionary plateau toward achieving a mature software process. By defining different levels of maturity, the CMM has formed a series of building blocks that help organizations grow in process capability and maturity. Each maturity level evolves from the foundation of the preceding level. The five CMM maturity levels are as follows:

#### Level 1 - the Initial Level

At the Initial level, the software development environment is undefined (ad hoc) and unstable. The software processes are constantly being changed or modified as the work progresses. The software process capability at this level is unpredictable.

#### Level 2 - the Repeatable Level

At the Repeatable level, basic software project procedures and policies have been defined. The organizations are able to effectively utilize similar process and software engineering practices from project to project. An effective process can be characterized as practiced, documented, enforced, trained, measured, and able to improve. The software process capability at this level is disciplined because the planning and tracking of software projects is stable and repeatable.

#### Level 3 - the Defined Level

At the Defined level, the software engineering and management processes for developing and maintaining software are documented and implemented across the organization. The organization utilizes effective software engineering practices when standardizing its software processes, and maintains the process through an organized and controlled activity. The software process capability at this level is standard and consistent because the management and development processes are stable and repeatable.

#### Level 4 - the Managed Level

At the Managed level, quantitative goals for the software products and processes are established. In the organization's measurement program, both productivity and quality are measured for important software process activities. An organization-wide database is used to collect software product and process data. The software process capability at this level is predictable because the process is measured and operates within set limits.

#### Level 5 - the Optimizing Level

At the Optimizing level, focus within the organization is on continuous process improvement. Many of the continuous improvement activities are defined and implemented proactively to improve the organization's defined standard processes and prevent defect occurrence. Data on the effectiveness of the software processes and defect analysis is used to identify possible changes to the organization's processes and determine the feasibility of new technologies. The software process capability at this level is characterized as continuously improving.

#### 2.2.2 Key Process Areas

Each maturity level of the CMM (with the exception of Level 1) is composed of a set of recommended practices in a number of Key Process Areas (KPAs) that have been shown to improve software process capability. A KPA could be viewed as a set of requirements for each maturity level. The KPAs are meant to perform collectively to achieve a set of goals for improving the overall process capability. Each KPA must be performed to achieve each maturity level.

Each KPA is described in terms of the key practices, or activities, that contribute the most to the effective implementation and utilization of the key process area. The key practices can be viewed as "what" is to be

ione. Key practices are in turn organized by common features that indicate whether implementation and institutionalization of a key process area is effective, repeatable, and lasting. The common features are defined as:

- Commitment to Perform
- Ability to Perform
- Activities Performed
- Measurement and Analysis
- Verifying and Implementation.

Practices specific to a particular process are contained in "Activities Performed." General practices that apply to every KPA at every maturity level are categorized by the four remaining common features. As a whole, these four form the foundation by which the Activities Performed practices can be institutionalized

#### 2.2.3 Summary

SEI's CMM provides organizations with a methodology and indicators to characterize their software development processes and products. The objectives of the CMM processes are: to define a capability maturity framework for processes used by software organizations to develop and evolve software products, to provide a map for software process improvement, and to provide an assessment methodology for determining software process maturity.

#### 2.3 Evaluation Process

The evaluation was performed in accordance with the BellSouth Extended Audit Procedures as part of the on-going process to:

- Determine whether the organization's work activities continue to address the applicable requirements as stated in the Software Solution Process Framework (SSPF) and product specific process and procedures.
- Determine whether the organization's implementation of the SSPF is being expanded.
- Identify and recognize areas of the process that are being performed well, identify opportunities for improvement, and identify nonconformances to the SSPF.

The project/organization was assessed against all processes and procedures detailed in the Software Solution Process Framework Version 1.0 dated April 1, 1997 and the Information Technology Software Metrics Handbook Version 2.0 dated April 1997.

The BellSouth Architecture and Standards group has the overall management responsibility for the SSPF Audit Program for all IT organizations involved in software development and maintenance.

The Manager of the SSPF Audit Group has the overall responsibility for the development and maintenance of the audit schedule. This manager is also responsible for continually monitoring the effectiveness of the Audit Program, recommending plans needed to maintain the competency of all auditors, and taking any appropriate actions to ensure that BellSouth continues to benefit from the high quality and value of the SSPF Audit Program.

For individual assessments, the Lead Assessor is responsible for producing and distributing the final evaluation report and updating the status of nonconformance items. The Extended SSPF Audit Program is further defined in the following sections. For this assessment, Bellcore performed the role of Lead Assessor.

#### 2.3.1 Evaluation Preparation

Bellcore's Lead Assessor was responsible for ensuring the scope and objectives of the evaluation were met. The Lead Assessor prepared an interview schedule and fixed a date for the closing conference with BellSouth management. In addition, the Lead Assessor, in conjunction with the evaluation team, prepared a checklist as a guide for the evaluation. The checklist was designed to be consistent with the Entrance Criteria, Exit Criteria, and Process Records identified in the SSPF.

#### 2.3.2 Opening Meeting

At an opening meeting, the Bellcore Lead Assessor explained the evaluation process to the BellSouth staff. The meeting provided a forum to.

- Introduce all parties associated with the evaluation.
- Explain the evaluation scope and objectives.
- Explain how the evaluation was to be conducted.
- Explain the expected output of the evaluation (e.g., positive observations, opportunities for improvement, and nonconformance items).
- Confirm the evaluation schedule.
- Answer questions/concerns from BellSouth staff.

The meeting established a rapport with BellSouth staff and set a positive tone for the remaining evaluation activities.

#### 2.3.3 Conducting the Evaluation

The Bellcore Lead Assessor interviewed selected BellSouth participants individually. From the interviews, the Lead Assessor sought to record information and findings in three areas:

- Positive observations processes and procedures that work well.
- Opportunities for improvement areas of concern not directly traceable to the SSPF or anything which
  potentially could improve product quality or reduce the overall cost of quality. They do not require a formal
  plan of action to be developed. However, it is recommended that they be included within the corrective action
  plan for the benefit of the project.
- Nonconformance items to the SSPF nonconformance items are recorded as either minor or major findings:

#### Minor:

- Isolated instances where procedures are not followed.
- A pattern does not exist.

Example: A particular item was not tracked.

#### **Major**

- A systematic pattern of non-compliance exists.
- A major Entrance or Exit Criteria is missing.

Examples: Issues and action items not tracked at all or requirements not baselined.

Through the use of the evaluation checklist or other mechanisms, the assessors looked for objective evidence (e.g., documentation, process records) to ensure that the project is successfully implementing and following the SSPF. All findings, both positive and negative, were recorded for discussion with the evaluation team and as input to the interim feedback sessions, closing conference, and final evaluation report.

#### 2.3.4 Interim Feedback Sessions

The evaluation team scheduled interim feedback sessions with BellSouth's management and staff to discuss the progress of the evaluation. These meetings were normally scheduled at the end of each day of interviews or the beginning of the next day. At these meetings, all observations of effective processes and procedures, opportunities for improvement, and any potential nonconformances were reviewed to obtain agreement with BellSouth and to clarify any issues that may have arisen from the observations. The combined observations from all interim feedback sessions were the main input to the closing conference and the final evaluation report.

#### 2.3.5 Closing Conference

The closing conference provided a summary of the evaluation for the BellSouth management and provided closure to the evaluation process. The closing conference:

- Recognized the evaluation participants.
- Summarized the processes where BellSouth is performing well.
- Summarized the areas and opportunities for improvement.
- Summarized the situation about SSPF nonconformance.
- Reviewed the corrective action/follow-up process.
- Responded to any questions from the BellSouth organization.

Throughout the evaluation process, the evaluation team provided advice on how to improve BellSouth's software development processes. Indeed, BellSouth staff were encouraged to correct situations during the evaluation, whenever possible.

#### 3.2 Opportunities for Improvement

The following items were identified as possible opportunities for improvement. Specific action plans are not required for these items, but it is recommended that these items be reviewed, and if warranted, action plans developed to improve the implementation of the SSPF.

- During the requirements phase, ensure that SSPF Checklists are revisited and reviewed to capture any
  adjustment made in tailoring of the process throughout the lifecycle of the project.
  Currently the SSPF checklists are tailored at the beginning of the software project. By revisiting the checklists
  throughout the lifecycle phases, any changes made in software planning and status can be reflected in the SSPF
  checklists.
- Ensure the implementation plan for local processes (i.e., code reviews) is fully communicated within the
  software project.
   The software project team has instituted local processes that support the SSPF. Many project team members are
  aware of the new processes. Using a communication plan during the implementation of the local processes will
  aid in the notification to the entire organization.
- In project planning, use a pointer to a "living" (e.g., WBS, roles, etc.) aspect of the plan that may need to change through the project (to ease re-versioning).

  By incorporating references to locations into the project plan for sections that change frequently, the project manager will reduce the number of reissues of the documented project plan.
- In the Configuration Management Plan, include any additional backout/recovery processes (beyond what is currently documented for the Operations Center).

  Currently, disaster/recovery aspects of the Configuration Management Plan are focused within the Operations Center processes. The software project team should include any additional information surrounding the project in the Configuration Management Plan. This will help to ensure that all levels of disaster/recovery are documented.
- Ensure that each SSPF phase is completed (as planned) before starting the next phase. This will aid in
  meeting entrance/exit criteria of the organizational processes.
   The software project plan has documented the lifecycle milestones and SSPF phases for the entire lifecycle. To
  meet the needs of each SSPF phase, the software project team needs to ensure that process records and process
  work products are completed according to their documented phase.

#### 3.3 Nonconformances

From this evaluation, Bellcore found no major or minor nonconformances. During this evaluation, the Electronic Interfaces Project Team has shown evidence, such as knowledge of processes, process records and process work products, that comply with the SSPF processes.

#### 3. The Evaluation Results

The evaluation results from the Project review are divided into two categories: positive impressions and opportunities for improvement. Positive impressions characterize the process activities that have been identified during the interview discussions that provide value in the development and implementation of the processes. Strengths within the processes and their implementation were identified as positive impressions. Opportunities for improvement characterize areas within the development and implementation that could aid in the improvement of these processes within the project.

Each evaluation result listed below is *Italicized*. For each result, additional descriptive information has been provided.

#### 3.1 Positive Impressions

The following positive impressions were identified during the course of the evaluation:

- From within the software project team, several local processes (e.g., requirements process) have been
  implemented to enhance the SSPF implementation and incorporate user involvement in several phases of the
  lifecycle.
  - The project team has been developing several supportive processes to aid in the implementation of the SSPF and improve user involvement and communication throughout the development lifecycle.
- The software project team has developed enhanced definitions of test planning, including the use of expected test results, and are capturing test metrics on test case completion.
   Test planning has been enhanced beyond the current requirements of the SSPF to include more project specific information. This has helped the project team in ensuring robust requirements coverage during the test phase of the software development lifecycle.
- The software project team is incorporating user input into test scenarios.

  Test scenarios used with the software project are reviewed by the user. This allows the software project additional validation coverage during the testing phase of the software development lifecycle.
- The software project team utilizes a configuration management tool (CMVC) to capture change request status (e.g., pending, approved, etc.).

  The software project team has utilized the capabilities of the configuration management tool to nelp with status reporting and recording of change requests against the project. This also helps the project team in addressing change requests more efficiently.
- There have been several improvements made in estimation processes.

  The software project has utilized several methodologies for improving their estimation process. Historical reports and tools have helped the team provide more efficient estimations for allocation of resources.

#### 4. Summary

Bellcore was invited by BellSouth to evaluate the Electronic Interfaces Project in accordance with BellSouth's Extended Audit Procedures. Following the evaluation process described in this report, Bellcore identified several areas of the process that are being performed well, a few opportunities for improvement, but no major or minor nonconformances to BellSouth's SSPF. From the results of this evaluation, the Electronic Interfaces Project has demonstrated the implementation and continuation of utilizing the SSPF processes within the project.

# ATTACHMENT 41

### Pre-Ordering Response Time (All Preorder Functions)

	Total	Complete	Average	# of incomplete	% of Incomplete	# Trans	% Comp Trans	# Trans	% Comp Trans
Month	Transactions	Transactions	<b>Transaction Time</b>	Transactions	<b>Transactions</b>	< 2 sec	< 2 sec	>= 5 sec	>= 5 sec
01-98	123	123	35.66	0	0.0%	0	0%	123	100%
02-98	199	199	28.00	0	0.0%	0	0%	199	100%
03-98	516	515	11.61	1	0.2%	0	0%	515	100%
04-98	346	345	11.40	1	0.3%	0	0%	345	100%
05-98	113	112	12.12	1	0.9%	0	0%	111	99%
06-98	132	132	14.34	0	0.0%	0	0%	132	100%
	1429	1426	16.21	3	. 0.2%	0	0%	1425	100%

#### **Definitions/Formulas**

Total Transactions = Total number of transactions

Complete Transactions = Total number of transactions with valid start and end time.

Average Transaction Time = Average Transaction Time in Seconds

Incomplete Transactions = Total number of transactions marked as "Transaction Incomplete/pending ..."

% of Incomplete Transactions = Incomplete Transactions / Total Transactions

Trans < 2 sec = Total number of transactions with Transaction Time < 2 seconds

% Comp Trans < 2 Sec = Trans < 2 sec / Complete Transactions

Trans > 5 sec = Total number of transactions with Transaction Time >= 5 seconds

% Comp Trans >5 Sec = Trans >5 sec / Complete Transactions

### ATTACHMENT 42

#### UPDATED FLOW THROUGH DATA

#### Includes May Data

BST	EDI	EDI	LENS	LENS	Total	Total
Report	Orders	BST Errors	Orders	BST Errors	Orders	BST Errors
DEC 97	3,810	234 (6.14%)	18,879	759 (4.02%)	22,689	993 (4.38%)
JAN 98	4,008	279 (6.96%)	9,214	637 (6.91%)	13,222	916 (6.93%)
FEB 98	3,221	263 (8.17%)	10,639	1,483 (13.94%)	13,860	1,746 (12.60%)
MAR 98	1,321	535 (40.45%)	10,271	1,481 (14.42%)	11,592	2,016 (17.39%)
APR 98	741	374 (50.47%)	16,812	2,982 (17.74%)	17,553	3,356 (19.12%)
MAY 98	1,698	497 (29.27%)	20,545	3,160 (15.38%)	22,243	3,485 15.67%)

#### OVERALL ELECTRONIC FLOW THROUGH

#### Percentages

Month	Raw Flow Thru	CLEC Errors	BST Errors	Adjusted F/T
December	68.1	86.3	13.7	92.7
January	63.7	80.9	19.1	90.5
February	62.3	66.5	33.5	87.4
March	64.0	51.7	48.3	78.6
April	62.1	49.6	50.4	76.4
May	69.2	49.2	50.8	81.5

#### Volumes

Month	LESOG Eligible	CLEC Errors	BellSouth Errors
December	22689	6253 (27.6%)	993 (4.4%)
January	13222	3878 (29.3%)	916 (6.9%)
February	13860	3473 (25.1%)	1746 (12.6%)
March	11592	2159 (18.6%)	2016 (17.4%)
April	17553	3304 (18.8%)	3356 (19.1%)
May	22243	3370 (15.5%)	3485 (15.7%)

# ATTACHMENT 43

Page 1 of 2

PERCENT REJECTED SERVICE REQUESTS AND PERCENT FLOW THROUGH SERVICE REQUESTS COMBINED REPORTS

Month to Date

Reporting Period 12/01/97 to 12/29/97

	METHOD	OF RE	CEIPT		T		PROCI	SSING				TOTAL	CLEC	BST	% Init	al % Data	"Raw"	"Adjusted"
C'umpany			<u> </u>	Total	Manual	Manual	Total	Total	I.EO	LESOG	LESOG	SOER	SOER	SOER	(1.1:0)	(LESOG)	Howthrou	gh Howthrough
	FAX	EDI	LENS	LSRs	Processed	Processe	Manual	Moch	FlOut	Elig	FIThr	Error	Errors	Errors	Reject	s Rejects	1 1	į
	or MAIL		ſ	1 1	Orders .	Errors	ĺ	1	•	[	1	[		[ [	1	1	[ [	•
A	38		0		38		1297	3278	1259		2019	1152	953	199	38.4		63 7%	
В	440	673	1	1114	440	240	680	674	240	629	434	193	162	33	35.6	<b>6</b> 25.8%	69.0%	88.4%
C	186	14	0		186	10	196					6		2	71 4	<b>40.0%</b>	40 0%	57 ttu
D	63	3	65		63		114	68	51	61		44			75.0	60.7%	27.9%	79.4%
E	2843	0	16956		2843		7711	16956	4868	16594	12088	4506		534	28.7	<b>23.9%</b>	72 8%	94 7%
F	1400	0		1913	1400	477	1877	513	477	402	36			41	93.0		9.0%	70.4%
G	242	0	446	688	242	18	260	446	18	445	428	17	14	3	4.09	3 1%	96.2%	99 1%
H	702	0		1050	7802	230	932	348	230	346	118	228	194	34	66.1		34.1%	89.7%
J	243	0		515	243	96	339	272	96	264	176		73	15	35.3	<b>6</b> 27.7%	66 7%	91.5%
K	400	0		594	400	168	568	194	168	169	26		120	23	86.6		15.4%	75 3%
i.	590	0			590	125	715	150	125	148	25		95	28	83.3	6 64.2%	16 9%	80 0%
M	51	0			51	110	161	112	110	112	2		96	14	98.2		1.8%	87.5%
Z	116	0	72	182	116	69	185	72	69	71	3	68	55	13	95.8		4 2%	80.6%
0	263	0		317	263	51	314	54	51	32	3	29		6	94.4		9.4%	48.1%
P	6	0		39	6	29	35	33	29	30	4	26		5	87.99		13 3%	75.8%
Q	5049	0		5077	5049	23	5072	28	23	28	5	23		5	82.19		17.9%	82.1%
R	13	0	27	40	13	18	31	27	18	27	9	18	14	4	66.75	6 51.9%	33 3%	85.2%u
S	1	0		23	1	20	21	22	20	19	2	17	13	4	90.91	6 68.4%	10.5%	68.2%
T	6	0		25	6	10	16	19	10	19	9	10	8	2	52.6	6 42.1%	47 4%	89.5%
U	10	0	16	26	10	16	26	.16	16	16	0	16	13	3	100.0	6 81.3%	0.0%	81.3%
<u>v</u>	379	0	16	395	379	10	389	16	10	8	6	2	- 1	1	62.59		75.0%	43.8%
W	77	0		92	77	12		13	12	15	3	12	10		10.07		20.0%	86.7%
X	0	0	12	12	0	0	0	12	0	12	12	0	0	0	0.0%		100 0%	100 0%
Υ	2759	0		2771	2759	11	2770	12	11	12		11	9	2	91.79		8.3%	83.3%
Z	0	0	10	10	0	0	0	10	0	10	10	0	0	9	0.0%	0.0%	100 0%	100 0%
<u>^^</u>		0		15			15				0	8	6	2	100.0		0.0%	75.0%
BB	217	0	8	225	217	8	225	8	8]	4	0	4	3		100.0		00%	37.5%
cc	10	0	7	17	10	7	17	7			0	7	5	2	100.0		0.0%	71.4%
00	4	0	4		1	4		4	4	3	0	3	2		100.01		0.0%	50 0%
EE	136	9	4	140	136	3	139	4	3]	4	!	3	2	1	75.09		25.0%	75 0%
FF	- 0	0	3		9	!	!	3	!	2	2		0	0	33.3%		100 0%	66 7%
00	12		3	15	12	3	15	3[	3[	3	0	3	2		100.01		0.0%	66 7%
HH	322	- 0	3	325	322	3	325	3	3	3	0	3	2		100.09		0.0%	66 7%
11	1302	0		1304	1302	2	1304	2	2	2	0	2	!		100.01		0.0%	50 0%
"	12	_	!	13	12	!	• 13	!		'	0	!	0		100.09		0.0%	0.0%
KK	53	<u></u> —ऑ	بـــــــــــــــــــــــــــــــــــــ	54	53		54	!	!		- 0		0	#	100.09		0.0%	0.0%
11.	330	0	1	331	330		331	11			0		0		100.09		0 0%	() ()*,
TOTALS	18282	3968	19438	41688	18282	7963	26245	23406	7963	22689	15443	7246	6253	993	34.0%	27.6%	68.1%	92.7%

BellSouth Telecommunications, Inc Tennessee Docket No. 97-00309 Exhibit JWM-3 Page 2 of 2

#### PERCENT REJECTED SERVICE REQUESTS AND PERCENT FLOW THROUGH SERVICE REQUESTS COMBINED REPORTS

Month to Date

Reporting Period 12/01/97 to 12/29/97

	A	METHOD	OF RE	CEIPT		T		PROCE	SSING				TOTAL	CLEC	BST	Γ	% Initial	% Data	"Raw"	"Adjusted"	ĺ
Comp	any T			T	Total	Manuel	Manual	Total	Total	l.EO	1.ESOG	LESOG	SOER	SOER	SOER		(1.1:0)	(LESOG)	Howthrough	Howthrough	ĺ
	1	FAX	EDI	LENS	LSR	Processed	Processe	Manual	Mech	FlOut	Elig	fillw	Error	Errors	timors		Rejects	Rejects			ĺ
}	U	x MAII.	<b>.</b>	<b>[</b>	11	Orders	Errors		<u> </u>		<u> </u>			l			1				l

NOTES

METHOD OF RECEIPT - indicates method original order was received from CLEC

#### PROCESSING

Manual Processed Orders - indicates orders received from the CLEC as paper LSRs, process by the LCSC

Manual Process Errors - indicates orders received electronicall from the CLEC which had fatal errors and were returned for correction.

Total Manual - total of the two items above

Total Mech - Total orders recived electronically via EDI or LENS

LEO FIQUE - Orders which failed the LEO business rule edits (missing or invalid LSR data) and were returned to the CLEC for correction

LESOG Elig - All orders (both inital, subsequent, and corrected) which are eligible for mechanized order generation.

LESOG FIThe - Orders which successfully generated an error free service orders in SOCS

TOTAL SOER Errors - order which failed to generate a service orders due to LESOG or SOER errors

CLEC SOER errors - partion of TOTAL SOER errors due to CLEC data errors

BST SOER errors - portion of TOTAL SOER errors due to BST software errors

% Initial (LEO) rejects = LEO FLOut / (Total Mech)

% Data (LESOG) rejects - CLEC SOER Errors / LESOG Elig.

"Raw" Flowthrough = LESOG FLThr / LESOG Elig

"Adjusted" flowthrough - projected flowthrough if CLEC orders if CLEC errors are removed

[NOTE: Adjusted flowthhrough is defined as (LESOG FLThr + CLEC SOER errors)/(LESOG Elig)]

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BELLSOUTH ELECTRONIC INTERFACE FLOW-THROUGH REPORT

Month to Date

Reporting Period 01/01/98 to 01/30/98

	METHOD	OF RE	CEIPT		т		PROCE	SSING	<del></del>			TOTAL	CLEC	BST	% Initial	% Data	"Raw"	"Adjusted"
Company				Total	Manual	Manual	Total	Total	LEO	LESOG	LESOG	SOER	SOER	SOER	(LEO)	(LESOG)	Flowthrough	Flowthrough
	FAX	EDI	LENS	LSRs	Processed	Processed	Manual	Mech	FlOut	Elig	FiThr	Error	Errors	Errors	Rejects	Rejects		
ļ	or MAIL				Orders	Errors				"				1 1				
A	80	3402	0	3482	80		1442	3402	1362	3286	2040		1031	215	40.0%	31.4%	62.1%	90.3%
В	561	413	4	978	561	174	735	417	[74	392	243	149	124	25	41.7%	31.6%	62.0%	88.0%
С	194	252	0	446	194				176	<u> </u>	76		108		69.8%	52.2%	36.7%	73.0%
D	3	70	0	73	3	56	59	70	56				44	8	80.0%	66.7%	21.2%	82.9%
E	135	64	0	199			186	64		52			34		79.7%	65.4%	25.0%	73.4%
F	0	4	0	4					4		0		0		100.0%	0.0%	0.0%	0,0%
G	0	2	0	2			0		0		2	0	0		0.0%	0.0%	100.0%	100.0%
Н	28	1	49	78	28	24			24	41	26		12	3	48.0%	29.3%	63.4%	76.0%
I	1	1	0	2	1		2	- 1	- 1	ı	0		0		100.0%	0.0%	0.0%	0.0%
J	0	1	0		0		1	1	1	1	0		0		100.0%	0.0%	0.0%	0.0%
K	552	0	5269	12821	552	1617	9169	5269	1617	5191	3652	1539	1200	339	30,7%	23.1%	70.4%	92.1%
L	326	0	659	985	326	17	343	659	17	655	642	13	11	2	2.6%	1.7%	98.0%	99.1%
M	768	0		2306	768	390	2158	538	390	532	148	384	315	69	72.5%	59.2%	27.8%	86.1%
N	170	0	389	559	170	76	246	389	76		313	75	61	14	19.5%	15.7%	80,7%	96.1%
0	625	0	339	964	625	98	<i>7</i> 23	339	98	338	241	97	79	18	28.9%	23.4%	71.3%	94.4%
P	520	0	332	5852	520	15	5535	332	15	330	317	13	10		4.5%	3,0%	96,1%	98.5%
Q	975	0	233	1208	975	95	1070	233	95	220	138	82	67	15	40.8%	30.5%	62.7%	88.0%
R	116	0		322	116	108	224	206	108	203	98	105	86	19	52.4%	42.4%	48,3%	89.3%
S	532	0	180	712	532	114	646	180	114	178	66	112	91	21	63.3%	51.1%	37.1%	87.2%
T	550	0	148	698	550	76	626	148	76	148	72	76	63	13	51.4%	42.6%	48.6%	91.2%
U	581	0	128	1709	581	121	1702	128	121	125	7	118	98	20	94.5%	78.4%	5.6%	82.0%
<u>v</u>	157	- 0	127	284	157	98	255	127	98	120	29	91	76	15	77.2%	63.3%	24.2%	82.7%
w	11	0	101	112	11	83	94	101	83	97	18	79	66	13	82.2%	68.0%	18.6%	83.2%
X	102	0	87	189	102	84	186	87	84	87	3	84	70	14	96.6%	80.5%	3.4%	83.9%
Y	306	이	77	383	306	56 13	362	77 73	56	61 73	21 60	40	33	7	72.7%	54.1%	34.4%	70.1%
Z	244	0	73	75 ) 309 (	244	291	15 273	65	13 29	65	36	13 29	10	3	17.8%	13.7%	82.2%	95.9%
AA	65	- 0	65		65	33	98	63	33	63	30	33	24	5	44.6%	36.9%	55.4%	92.3%
BB CC	15	0	63 54	128	15	18	33	54	18	54	36	18	27	6	52.4%	42.9%	47.6%	90.5%
DD	131	- 0	54	681	14	30	44	54	30	54	24	30	15	3	33.3%	27.8%	66.7%	94.4%
EE	163	0	52	215	163	30	193	52	30	51	22	29	25	5	55.6%	46.3%	44.4%	90.7%
FF F	103	- 8	29	37	8	27	35	29	27	29	22	27			57.7%	47.1%	43.1%	88.5%
GG	19	- 8			19	13	32	25	13	25	12		22	5	93.1%	75,9%	6.9%	82.8%
нн	111	- 0	25 17	44   28	19	15	26	17	15	17	2	13 15	10	3	52.0%	40.0%	48.0%	88.0%
11	915	- 0	17	49301	915	15	4930	17	15	17	- 2	15	12	3	88.2%	70.6%	11.8%	82.4%
<del>"  </del>	32	0	15	4930	32	9	4930	15	9	9	- 6	3	12		100.0%	80.0%	0.0%	80.0%
KK	32	- 6	12	13	32	7	8	12	7		5	6	- 2		60.0%	22.2%	66.7%	53.3%
	940	- 0		951	940	<del></del>	951	12	<del>- 1</del> 1	11	- 3	2	<del>}</del>		58.3%	45.5%	45.5%	83.3%
LL MM	110	- 0	11	1181	110	- 6	116	- 8	6		2	- 2	<del>}</del>	<del>; </del> -	100.0%	50.0%	0.0%	9.1%
AIIAI	110}	U)	В	110]	1 1101	- 0}	110	8	0			31	41	1	75.0%	57.1%	28.6%	75.0%

#### BELLSOUTH ELECTRONIC INTERFACE FLOW-THROUGH REPORT

Month to Date

Reporting Period 01/01/98 to 01/30/98

	METHOD	OF RE	CEIPT				PROCE	SSING				TOTAL	CLEC	BST	% Initial	% Data	"Raw"	"Adjusted"
Company				Total	Manual	Manual	Total	Total	LEO	LESOG	LESOG	SOER	SOER	SOER	(LEO)	(LESOG)	Flowthrough	Flowthrough
	FAX	EDI	LENS	LSRs	Processed	Processed	Manual	Mech	FlOut	Elig	FIThr	Ептог	Errors	Errors	Rejects	Rejects		ì
	or MAIL		l		Orders	Errors		<u> </u>			L				L_			1
NN	781	0	7	788	781	3	784	7	3	5	4	1		0 1	42.9%	0.0%	80.0%	57.1%
00	355	Ő	5	360	355	3	358	5	3	4	2	2		1	60.0%	25.0%	50.0%	60.0%
PP	0	Ó	5	5	0	5	5	5	5	0	0	0		0	100.0%	0.0%	0.0%	0.0%
QQ	22	0	4	26	22	4	26	4	4	4	0	4		3 1	100.0%	75.0%	0.0%	75.0%
ŔŘ	16	0	4	20	16	3	19	4	3	2	1	1		0 1	75.0%	0.0%	50.0%	25.0%
SS	162	0	3	165	162	1	163	3	1	3	2			) 1	33.3%	0.0%	66.7%	66.7%
Π	41	Ö	3	44	41	3	44	3	3	3	0	3		2 1	100.0%	66.7%	0.0%	66.7%
UU	390	0	2	392	390	1	391	2	1	1	1	0	(	0	50.0%	0.0%	100.0%	50.0%
VV	15	0	2	17	15	0	15	2	0	2	2	0	(	0	0.0%	0.0%	100.0%	100.0%
ww	438	0	1	439	438	1	439	1	1	I	0	1		) 1	100.0%	0.0%	0.0%	0.0%
TOTALS	12052	4210	9395	43657	12052	5177	35229	13605	5177	13222	8428	4794	3878	916	38.1%	29.3%	63.7%	90.5%

#### NOTES:

METHOD OF RECEIPT - indicates method original order was received from CLEC

#### **PROCESSING**

Manual Processed Orders - indicates orders received from the CLEC as paper LSRs, process by the LCSC

Manual Process Errors - indicates orders received electronicall from the CLEC which had fatal errors and were returned for correction.

Total Manual - total of the two items above

Total Mech - Total orders recived electronically via EDI or LENS

LEO FlOut - Orders which failed the LEO business rule edits (missing or invalid LSR data) and were returned to the CLEC for correction

LESOG Elig - All orders (both inital, subsequent, and corrected) which are eligible for mechanized order generation.

LESOG FIThr - Orders which successfully generated an error free service orders in SOCS

TOTAL SOER Errors - order which failed to generate a service orders due to LESOG or SOER errors

CLEC SOER errors - portion of TOTAL SOER errors due to CLEC data errors

BST SOER errors - portion of TOTAL SOER errors due to BST software errors

% Initial (LEO) rejects = LEO FLOut / (Total Mech)

% Data (LESOG) rejects - CLEC SOER Errors / LESOG Elig

"Raw" Flowthrough = LESOG FLThr / LESOG Elig

"Adjusted" flowthrough - projected flowthrough of CLEC orders if CLEC errors are removed

[NOTE: Adjusted flowthhrough is defined as (LESOG FLThr + CLEC SOER errors)/(LESOG Elig)]

#### Ordering

### REPORT: PERCENT FLOW THROUGH SERVICE REQUESTS (DETAIL) REPORT PERIOD: 02/01/1998 - 02/28/1998

Company	7 ,	METHOD OF R	ECEIPT		F	ROCESSIN	<b>3</b>									
			T	]		Manual										
					Total	Processed										
1		ł	1		Manual	Errors				Total	CLEC	BST	%Initial	%Data	%LESOG	
ļ	j		]	Total	Processed	L.	Total	LESOG	LESOG	SOER	SOER	SOER	(LEO)	(LESOG)	FIThr	Adjusted
Name	FAX or MAIL	EDI	LENS	LSR's		Flout)	Mech	Elig	FIThr	Errors	Errors	Errors	Rejects	Rejects	("Raw")	FlowThrough
Α	72	2333	0	2405	1134	1062	2333	2193	1271	922	873	49	45.5%	39.8%	58.0%	97.8%
В	574	596	9	1179	935	361	605	584	244	340	231	109	59.7%	39.6%	41.8%	81.3%
С	81	423	0	504	392	311	423	370	112	258	175	83	73.5%	47.3%	30.3%	77.6%
D	137	86	0	223	216	79	86	67	7	60	40	20	91.9%	59.7%	10.4%	70.1%
E	5	4	0	9	6	1	4	4	3	1	0	1	25.0%	0.0%	75.0%	75.0%
F	0	3	0	3	3	3	3	3	0	3	2	1	100.0%	66.7%	0.0%	66.7%
G	2048	0	5708	7756	3287	1239	5708	5548	4469	1079	903	176	21.7%	16.3%	80.6%	96.8%
H	549	0	853	1402	948	399	853	846	454	392	274	118	46.8%	32.4%	53.7%	86.1%
!	801	0	691	1492	1078	277	691	623	414	209	142	67	40.1%	22.8%	66.5%	89.2%
J	3160	0	667	3827	3665	505	667	661	162	499	320	179	75.7%	48.4%	24.5%	72.9%
K	3638 386	0	502 468	4140	3691	53 458	502 468	501 468	449 10	52 458	35 36	17 422	10.6% 97.9%	7.0% 7.7%	89.6% 2.1%	96.6% 9.8%
L M	272	0	258	854 530	844 416	456 144	258	252	114	138	93	45	55.8%	36.9%	45.2%	82.1%
N N	58	0	236 246	304	79	21	236 246	252 245	225	20	13	<b>4</b> 5 7	8.5%	5.3%	91.8%	97.1%
0	202	0	240	444	79 304	102	242	239	140	99	17	82	42.1%	7.1%	58.6%	65.7%
P	193	Ö	231	424	423	230	231	231	1	230	14	216	99.6%	6.1%	0.4%	6.5%
á	600	0	214	814	783	183	214	197	31	166	113	53	85.5%	57.4%	15.7%	73.1%
R	121	ő	165	286	177	56	165	162	109	53	36	17	33.9%	22.2%	67.3%	89.5%
S	17	ő	117	134	105	88	117	117	29	88	59	29	75.2%	50.4%	24.8%	75.2%
T	16	Ö	105	121	50	34	105	105	71	34	23	11	32.4%	21.9%	67.6%	89.5%
Ú	15	ő	101	116	23	8	101	101	93	8	5	3	7.9%	5.0%	92.1%	97.0%
v	9	ő	95	104	55	46	95	86	49	37	25	12	48.4%	29.1%	57.0%	86.0%
w	533	ŏ	84	617	557	24	84	84	60	24	16	8	28.6%	19.0%	71.4%	90.5%
×	15	ŏ	71	86	33	18	71	70	53	17	11	6	25.4%	15.7%	75.7%	91.4%
Ŷ	28	ŏ	39	67	40	12	39	38	27	11	7	4	30.8%	18.4%	71.1%	89.5%
ž	19	Ö	38	57	36	17	38	24	21	3	2	1	44.7%	8.3%	87.5%	95.8%
ĀĀ	84	Ö	31	115	111	27	31	6	4	2	1	1	87.1%	16.7%	66.7%	83.3%
BB	62	Ō	16	78	70	8	16	15	8	7	4	3	50.0%	26.7%	53.3%	80.0%
CC	850	O	15	865	862	12	15	5	3	2	1	1	80.0%	20.0%	60.0%	80.0%
DD	504	0	8	512	511	7	8	1	1	0	0	0	87.5%	0.0%	100.0%	100.0%
EE	13	0	6	19	16	3	6	6	3	3	2	1	50.0%	33.3%	50.0%	83.3%
FF	92	0	3	95	95	3	3	1	0	1	0	1	100.0%	0.0%	0.0%	0.0%
GG	67	0	2	69	67	0	2	2	2	0	0	0	0.0%	0.0%	100.0%	100.0%
HH	38	0	2	40	38	0	2	2	2	0	0	0	0.0%	0.0%	100.0%	100.0%
11	0	0	2	2	2	2	2	0	0	0	0	0	100.0%	0.0%	0.0%	0.0%
IJ	409	0	2	411	411	2	2	1	0	1	0	1	100.0%	0.0%	0.0%	0.0%
KK	3	0	1	4	4	1	1	1	0	1	0	1	100.0%	0.0%	0.0%	0.0%
LL	3354	0	1	3355	3355	1	1	1	0	1	0	1	100.0%	0.0%	0.0%	0.0%
TOTALS	19025	3445	10993	33463	24822	5797	14438	13860	8641	5219	3473	1746	40.2%	25.1%	62.3%	87.4%

# ATTACHMENT 44